

Factors of Population Change

Overview - Components of Population Change

The growth of Australia's population has two components: natural increase (the number of births minus the number of deaths) and net overseas migration (the difference between the number of incoming travellers and the number of outgoing travellers).

This activity involves looking at the contribution of each of these components in Australia's population growth for the period 2006 - 2010.

Task One: Births and Deaths

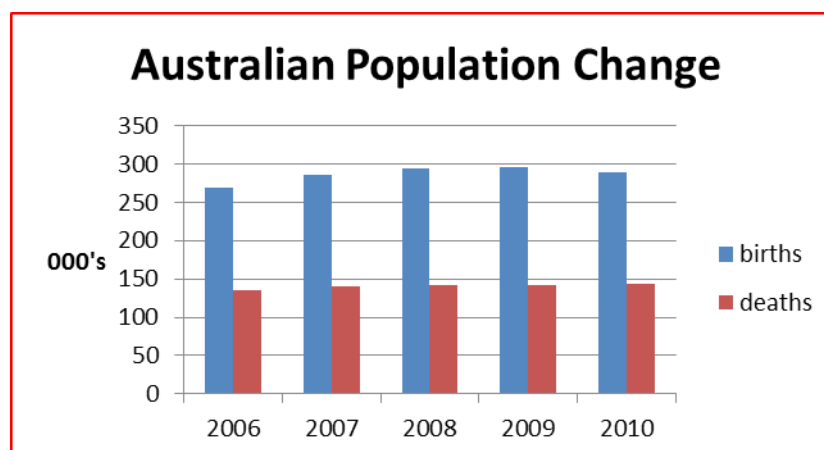
Look at the Population Change Summary, for Australia below.

Year	Components of population change	
	Births '000	Deaths '000
2006	268.5	134.5
2007	285.3	139.8
2008	294.1	142.5
2009	295.3	141.6
2010	289.5	143.4

TABLE 1A: POPULATION CHANGE SUMMARY, AUSTRALIA

(cat. No. 3101.0 AUSTRALIAN DEMOGRAPHIC STATISTICS, SEPT 2011, PUBLICATION PDF, TABLE 1)

1. Use the births and deaths data in figure 1 to create a side by side bar graph comparing births and deaths for each year from 2006-2010. Choose your scale and label your graph carefully.



2. Births

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- a) Based on the data contained in table 1 and your graph, what trends or patterns do you observe in the number of births from 2006-2010.

The total number of births from 2006 – 2010 was 1,432,700. In 2010 there were 289,500 births, an increase of 21,000 on the 2006 total of 268,500. Overall the number of births increased steadily from 2006 to 2009 then showed a slight decrease in 2010.

- b) Identify when the smallest and largest increases or decreases and the size of these movements.

The greatest increase in the number of births was from 2006 to 2007 (16,800 more births) and greatest decrease was from 2009 to 2010 (5,800 fewer births).

- c) Can you suggest possible reasons for these trends (or patterns)?

It is reasonable to think that as the population of Australia increases then the number of births will also increase. The reason for the decrease cannot be determined from this data alone.

3. Deaths

- a) Based on the data contained in table 1 and your graph, what trends or patterns do you observe in the number of deaths from 2006-2010.

The total number of deaths from 2006 – 2010 was 701,800, just under half the number of births for the same period. The number of deaths has increased steadily each year from 2006 to 2010 with the exception of 2009 where there was a decrease in the number of deaths from the previous year. Overall there were 8,900 more deaths in 2010 than in 2006.

- b) Identify when the smallest and largest increases or decreases and the size of these movements.

The greatest increase in deaths was from 2006 to year 2007 where the number of deaths increased by 5,300. The number of deaths decreased from 2008 – 2009 where the number of deaths fell by 900.

- c) Can you suggest possible reasons for any trends (or patterns)?

As with the answer to qn 2c it is reasonable to expect the annual number of deaths to increase as the population increases. Further, we would expect the number of deaths to increase as the mean age of Australian's population increases. The reason for the decrease cannot be found from this data alone.

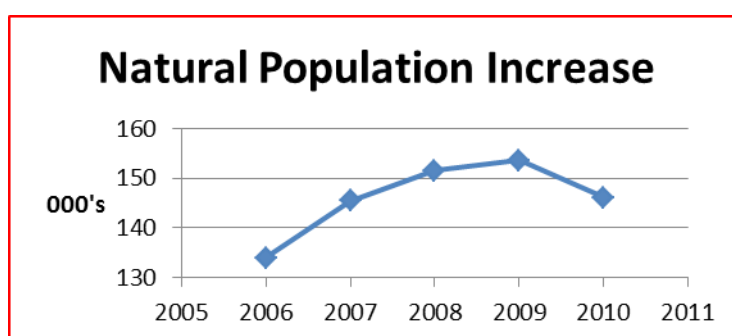
Task Two: Natural Population Increase (Births - Deaths)

4. a) Complete column 4 'Natural increase '000 in table 1B by subtracting the number of deaths from the number of births.

Year	Components of population change		
	Births '000	Deaths '000	Natural Increase '000
2006	268.5	134.5	134
2007	285.3	139.8	145.5
2008	294.1	142.5	151.6
2009	295.3	141.6	153.7
2010	289.5	143.4	146.1

TABLE 1B: POPULATION CHANGE SUMMARY, AUSTRALIA

- b) Show this increase in a line graph.



- c) What trends or patterns can you observe?

The natural population increase is the amount by which the number of births exceeds the number of deaths. For each year 2006 to 2009 this number increased. However from 2009 to 2010 there was a decrease in the amount by which births exceeded deaths.

- d) In which year was the rate of increase greatest? In which year was the rate of increase the smallest? Use your observations to list some possible implications of any trends (or patterns) you notice in the natural population increase over this time.

The greatest natural increase of 11,500 occurred from 2006 – 2007. From 2009 to 2010 the rate of population increase dropped by 7,600. This means that although the natural population as a whole increased (the number of births was greater than the number of deaths) it did so at a slower rate than in the 5 previous years. This corresponds with a decrease

in the number of births in 2010. It would be interesting to keep an eye on this decrease to see if it was isolated event or the beginning of a trend.

Task Three: Total Population Growth (NI + NOM)

5. The table below includes migration figures for 2006 – 2010. Starting with the figures for 2006, show:

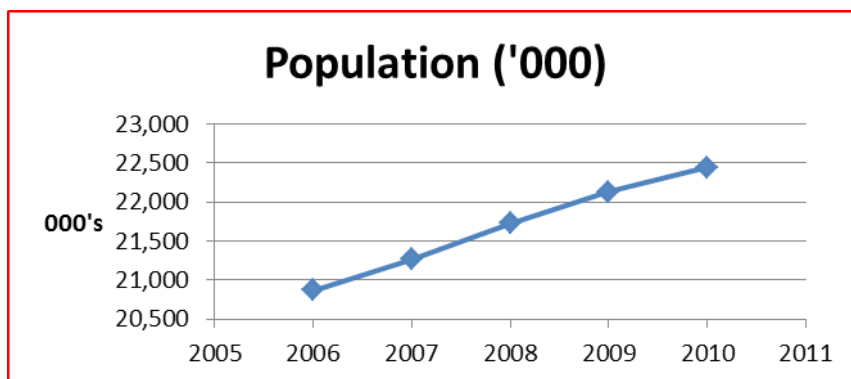
- the estimated population for all years by factoring in births, deaths and migration (column 6)
- the increase in population each year in '000s (column 7) and,
- the % increase each year (column 8)

Year	Components of population change				Population		
	Births '000	Deaths '000	Natural increase (NI) '000	Net overseas migration (NOM) '000	At end of period '000	Increase '000	Increase %
2006	268.5	134.5	134.0	182.2	20,873.7	329.6	1.60
2007	285.3	139.8	145.5	244.1	21,263.3	389.6	1.87
2008	294.1	142.5	151.6	315.7	21,730.6	467.3	2.20
2009	295.3	141.6	153.7	246.9	22,131.2	400.6	1.84
2010	289.5	143.4	146.0	168.8	22,446.0	314.9	1.42

TABLE 2: PERCENTAGE POPULATION CHANGE

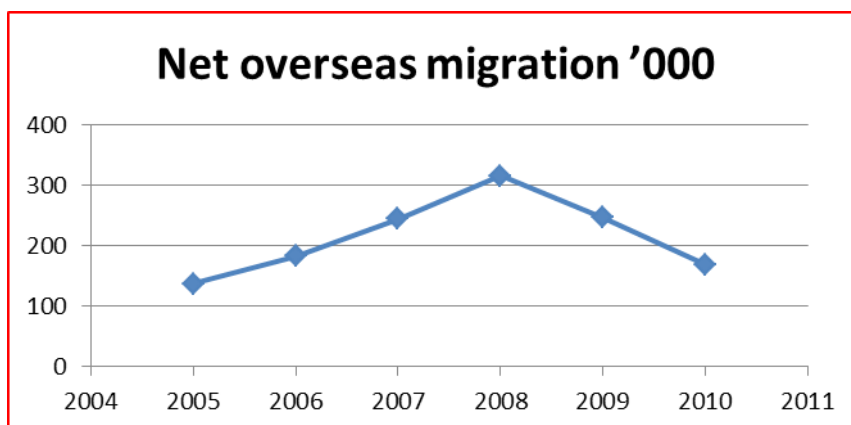
Note: population estimates and their components have sometimes been rounded. Rounded figures and unrounded figures should not be assumed to be accurate to the last digit shown. Where figures have been rounded, discrepancies may occur between sums of component items and totals.

6. Use a line graph to show how the population has changed over this period. Comment on what is shown.



Population has increased steadily in the period 2006 – 2010. However the increase from 2009 – 2010 occurred at a lower rate, shown by the gradient becoming less steep.

7. Use a line graph to show how the net overseas migration has changed during this period. Comment on any trends.



During this period net overseas migration increased steadily to a peak of 315,700 in 2008. In the following 2 years, 2009 and 2010, net migration fell sharply by 68,800 and 78,100 respectively.

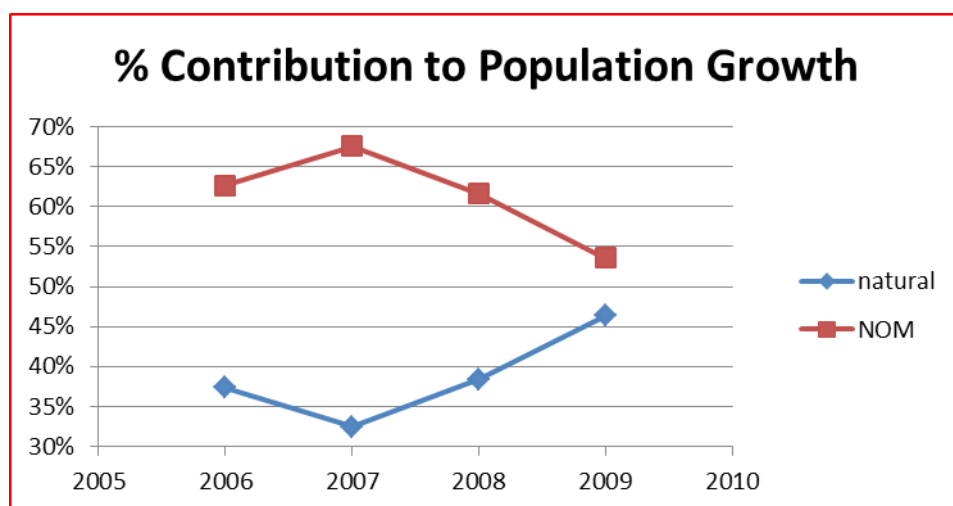
8. In 2010 the contribution to population increase was higher for net overseas migration (54%) than for natural increase (46%). Complete the table below to see if the same applied for the years 2006 – 2010.

Year	Components of population change		Population			
	Natural increase	Net overseas migration (NOM)	At end of period	Increase	contribution of natural increase to overall increase	contribution of net annual migration to overall
2006						
2007						
2008						
2009						
2010						

	'000	'000	'000	'000	%	increase %
2006	134	182.2	20,873.70	329.60	40.66%	55.28%
2007	145.5	244.1	21,263.30	389.60	37.35%	62.65%
2008	151.6	315.7	21,730.60	467.30	32.44%	67.56%
2009	153.7	246.9	22,131.20	400.60	38.37%	61.63%
2010	146	168.8	22,446.00	314.90	46.36%	53.60%

TABLE 3: CONTRIBUTION TO POPULATION CHANGE

From the calculations we can see that for this period net overseas migration did contribute a higher percentage to the overall population growth than natural increase. The contribution was greatest in 2008 and since then has converged back towards 50/50. This can be seen more easily in the following line graph:



9. In small groups of 3-4, discuss why it might be important for the Australian Government to encourage migrants to come to Australia. Write your answers below.

Answers will vary but can include:

- A culturally diverse workforce has a specialised knowledge that can be applied to overseas businesses and markets*
- Skilled migrants are important to fill labour shortages in certain areas of employment*
- With declining birth rates, Australia's population is ageing and causing a strain on resources. Migration offers one way to redress the imbalance.*